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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/493,350	01/28/2000	John Brewer	696-250	2142

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EXAMINER

TRAN, HIEN THI

ART UNIT PAPER NUMBER

1764

DATE MAILED: 11/03/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/493,350

Applicant(s)

BREWER ET AL.

Examiner

Hien Tran

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 24 May 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☐ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_.

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

### *Claim Rejections - 35 USC § 103*

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

4. The art area applicable to the instant invention is that of furnace.

One of ordinary skill in this art is considered to have at least a B.S. degree, with additional education in the field and at least 5 years practical experience working in the art; is aware of the state of the art as shown by the references of record, to include those cited by

Art Unit: 1764

applicants and the examiner (*ESSO Research & Engineering V Kahn & Co*, 183 USPQ 582 1974) and who is presumed to know something about the art apart from what references alone teach (*In re Bode*, 193 USPQ 12, (16) CCPA 1977); and who is motivated by economics to depart from the prior art to reduce costs consistent with the desired product characteristics. *In re Clinton* 188 USPQ 365, 367 (CCPA 1976) and *In re Thompson* 192 USPQ 275, 277 (CCPA 1976).

5. Claims 1, 3, 5, 9-10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Thompson (2,323,498).

With respect to claims 1, 9, Thompson discloses a furnace comprising:

at least one fired radiant chamber, wherein the chamber is divided into at least two separate independent radiant zones 7, 7' by a dividing means 6;

at least one burner 13 in each zone 7, 7';

a convection chamber 8 in directed communication with the radiant chamber;

at least one independent process coil 9, 10, 9', 10' for each of the zones, wherein each coil extends through at least a portion of the convection chamber 8 and extends into one said zones 7, 7' before exiting said furnace;

a flue 18 for discharging flue gas located at the top of the convection chamber 8 of the furnace; and

a means 17 for independently controlling the radiant burners 13 in each zone 7, 7' (Fig. 1).

With respect to claim 3, the two radiant zones have substantially the same area (Fig. 1).

Art Unit: 1764

With respect to claims 5, 10, the diving means 6 is a brick wall (page 1, col. 2, lines 30-44).

Note that intended use, e.g. for cracking two separate and independent feeds, is of no patentable moment in apparatus claims, and therefore instant claims 1, 3, 5, 9-10 structurally read on the apparatus of Thompson.

In any event, since the apparatus of Thompson has a separate and independent coil for each zone, e.g. zone 7 contains coils 10, 9 while zone 7' contains coils 9', 10'; said apparatus is capable of cracking two separate and independent feeds and therefore cracking more than one feed is within the purview of one having ordinary skill in the art during routine experimentation and optimization of the system thereof.

6. Claims 2, 4, 8, 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (2,323,498).

With respect to claim 2, the apparatus of Thompson is substantially the same as that of the instant claims, but is silent as to whether there may be more than one radiant chamber.

However, it would have been obvious to one having ordinary skill in the art to provide more than one radiant chamber in the apparatus of Thompson since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

The same intended use comments apply.

With respect to claim 4, it would have been obvious to one having ordinary skill in the art to select the size for the zones in the apparatus of Thompson on the basis of its suitability for the intended use as a matter of obvious design choice, absence showing any unexpected results and

Art Unit: 1764

since it has been held that when the only difference between the prior art device and the claim was a recitation of relative size, and the device with the relative size would not perform differently than the prior art device, the claimed device was not patentably distinct from the prior art device. In *Gardner v. TEC System, Inc.* 725 F.2d 1338, 220 USPQ 777.

With respect to claim 8, Thompson discloses a means 17 for independently controlling the radiant burners 13 in each zone 7, 7' (Fig. 1). Although Thompson does not explicitly disclose that whether said means may be a fuel regulator, Thompson discloses that said means 17 is for regulating the combustible air which is a part of the combustible fuel/air mixture in the burner 13. Therefore said means is broadly considered as a fuel regulator (note that the instant specification does not define any specific structure for said means (e.g. fuel regulator) to distinguish said means from that of the prior art). Thompson also discloses that in order to regulate the heat input to the tubes in the combustion zones 7 and 7', the combustibles supplied to the heater through the burner ports 14 are varied (page 2, col. 1, lines 64-69). Thompson also discloses that the combustible fuel and air are supplied to the furnace through the burner 13 and the firing ports 14 and since each burner has a separate port 16 and plate 17, each burner is separately controlled.

7. Claims 6-7, 11-12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Thompson (2,323,498) in view of Kushch et al (6,159,001 or 5,711,661).

The apparatus of Thompson is substantially the same as that of the instant claims, but fails to disclose the specific material of the dividing means as claimed.

However, Kushch et al disclose provision of using Nextel material in furnace art.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to select an appropriate material, such as ceramic fiber, Nextel in the apparatus of Thompson, since it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice, absence showing any unexpected results. *In re Leshin*, 125 USPQ 416.

***Response to Arguments***

8. Applicant's arguments filed 5/24/04 have been fully considered but they are not persuasive.

Applicants argue that Thompson teaches the use of separate combustion zones with one continuously connected vertical and horizontal fluid conduit capable of reverse flow (col. 2, lines 50-59). Such contention is not persuasive as the description in col. 2, lines 50-59 is used to illustrate one embodiment of Thompson. Thompson does disclose another embodiment in Fig. 1 in which process coil 10 is disposed in zone 7 and process coil 10' is disposed in zone 7', wherein each coil 10, 10' has an extension 9, 9', respectively, the coils 10, 9 extend through at least a portion of the convection chamber 8 and into said zone 7, 7' before exiting said furnace.

Applicants argue that Thompson '498 teaches away from the instant claims by exposing the single inlet manifold that is a part of the continuously connected conduits that make up the process coil to the various conditions of each radiant chamber. Such contention is not persuasive as the language of the instant claim does not exclude provision of a manifold.

Applicants argue that there is no suggestion in Thompson to process more than one feed stock at a time since the coils are connected to a single manifold. Such contention is not

persuasive as the language of the instant claims is not commensurate in scope with such argument.

Furthermore, as set forth above, the instant claims are directed to apparatus claims wherein intended use, e.g. for cracking two separate and independent feeds, is of no patentable moment therein and also the phrase of process more than one feed stock "at a time" is not recited in the instant claims. Also note that since Thompson discloses two manifolds 12, 12', the two feedstocks can be introduced in two manifolds 12, 12' at the same time or in the manifold 11 one at a time.

Furthermore, Thompson discloses that each of the two zones has means 17 for independently controlling the radiant burners 13 therein (Fig. 1) and that in order to regulate the heat input to the tubes in the combustion zones 7 and 7', the combustibles supplied to the heater through the burner ports 14 are varied (page 2, col. 1, lines 64-69). Thompson also discloses that the combustible fuel and air are supplied to the furnace through the burner 13 and the firing ports 14 and since each burner has a separate port 16 and plate 17, each burner is separately controlled. Accordingly, the two zones are capable of processing two feedstocks under two different conditions.

With respect to the arguments regarding claims 2, 4, 8, 12, as set forth above, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide more than one set of radiant chambers, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.



***Conclusion***

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hien Tran whose telephone number is (571) 272-1454. The examiner can normally be reached on Tuesday-Friday from 7:30AM-6:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR

Art Unit: 1764

system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



**Hien Tran**  
**Primary Examiner**  
**Art Unit 1764**

HT